DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Eric M. Ringer on 07/30/09.

2. The application has been amended as follows:

IN THE CLAIMS:

Claim 1, lines 1-5, the limitation "A circuit for generating a cyclic prefix of a symbol comprised of a sequence of samples in the time domain, said prefix being a reproduction of the last samples of the symbol at the beginning of the symbol, the symbol being obtained by inverse Fourier transform of complex coefficients corresponding to respective frequencies, the circuit comprising:" has been replaced by --- A circuit for generating a cyclic prefix of a symbol, in time domain, comprised of a sequence of samples in the time domain, said sequence of samples having a first number (N) samples beginning at a first (1^{st}) sample and ending at a last (Nth) sample, a subset of the sequence of samples has a second number (N-n) of samples starting at an intermediate sample (n), each respective sample between the intermediate sample, and the last (Nth) sample, where n is greater than or equal to 1 and less than N, said prefix being a reproduction of the subset of the samples of the symbol at a beginning of

the symbol, the symbol being obtained by inverse Fourier transform of complex coefficients corresponding to respective frequencies, the circuit comprising: ---

Claim 1, line 6, the limitation “means for shifting the phase” has been replaced by --- means for shifting a respective phase ---.

Claim 1, line 9, the limitation “on the shifted complex coefficients” has been replaced by --- on phase shifted complex coefficients ---.

Claim 1, line 10, the limitation “a circular permutation;” has been replaced by --- a circular permutation and such that the symbol is delayed by an amount of time for generating said prefix; ---.

Claim 1, line 11, the limitation “for storing the shifted samples; and" has been replaced by --- for storing the subset of samples, wherein said memory stores only the subset of samples without storing any other sample of the symbol; and ---.

Claim 2, line 2, the limitation “for shifting the phase of the complex coefficients include” has been replaced by --- for shifting the respective phase of each complex coefficients includes ---.

Claim 4, line 3, the limitation “the input and to the output” has been replaced by --- an input and to an output ---.

Claim 6, lines 1-4, the limitation “A method for generating a cyclic prefix of a symbol in the time domain, said prefix being a reproduction of the last samples of the symbol at the beginning of the symbol, the symbol being obtained by inverse Fourier transform of complex coefficients corresponding to respective frequencies, the method comprising the steps of:” has been replaced by --- A method for generating a cyclic

prefix of a symbol, in time domain, comprised of a sequence of samples in the time domain, said sequence of samples having a first number (N) samples beginning at a first (1^{st}) sample and ending at a last (Nth) sample, a subset of the sequence of samples has a second number (N-n) of samples starting at an intermediate sample (n), each respective sample between the intermediate sample, and the last (Nth) sample, where n is greater than or equal to 1 and less than N, said prefix being a reproduction of the subset of the samples of the symbol at a beginning of the symbol, the symbol being obtained by inverse Fourier transform of complex coefficients corresponding to respective frequencies, the method comprising: ---.

Claim 6, line 5, the limitation "a value proportional to the frequency" has been replaced by --- a value proportional to respective frequency ---.

Claim 6, line 7, the limitation "on the shifted complex" has been replaced by --- on phase shifted complex ---.

Claim 6, line 8, the limitation "such that said last samples of the symbol" has been replaced by --- such that said subset of the samples of the symbol ---.

Claim 6, line 10, the limitation "storing the shifted samples of the beginning of the symbol in a buffer" has been replaced by --- storing the subset of the samples of the beginning of the symbol in a buffer without storing any other sample of the symbol ---.

Claim 7, line 1, the limitation "wherein shifting the phase" has been replaced by --- wherein the shifting the phase ---.

Claim 10, lines 1-3, the limitation "The method of claim 6 wherein the shifting step includes delaying the symbol only by the duration of said prefix and the storing step

stores only the shifted samples without storing any of the samples of the symbol other than the shifted samples." has been replaced by --- The method of claim 6 wherein performing an inverse Fourier transform includes delaying the symbol by an amount of time for performing the inverse Fourier transform of said prefix. ---.

Claim 11, line 4, the limitation "the frequency" has been replaced by --- a frequency ---.

Claim 11, line 10, the limitation "of the symbol." has been replaced by --- of the symbol, wherein the set of samples is a sequence of samples that includes a first sample and a last sample, and the subset of samples includes at least the first sample, and wherein outputting the symbol in the time domain with the subset of the samples as a prefix of the symbol includes:

sequentially providing, from the inverse Fourier transform circuit, each sample of the subset of samples to a buffer and a multiplexer, wherein the multiplexer sequentially outputs each respective sample provided thereto;

sequentially providing, from the inverse Fourier transform circuit, each sample that is not a member of the subset of samples to the multiplexer after the subset of samples are provided to the multiplexer; and

sequentially providing, from the buffer, each buffered sample from the subset of samples. ---

Claim 12, line 1, the limitation "wherein shifting the phase" has been replaced by --- wherein the shifting the phase ---.

Claim 16, line 2, the limitation “from complex coefficients” has been replaced by --- from the complex coefficients ---.

Claim 17, line 2, the limitation “delaying the symbol only by the duration of said prefix; and

storing, prior to outputting the symbol, only the shifted samples without storing any of the samples of the symbol other than the shifted samples.” has been replaced by --- delaying the symbol by an amount of time for performing an inverse Fourier transform of said prefix; and

storing, prior to outputting the symbol, the shifted samples. ---.

Claim 20, line 1, the limitation “wherein buffering” has been replaced by --- wherein the buffering ---.

Claim 21, line 1, the limitation “wherein outputting” has been replaced by --- wherein the outputting ---.

Claim 22, line 1, the limitation “wherein shifting a phase” has been replaced by --- wherein the shifting the phase ---.

Claim 22, line 2, the limitation “a value proportional” has been replaced by --- the value proportional ---.

Claim 22, line 8, the limitation “the retrieved complex number” has been replaced by --- the retrieved respective complex number ---.

Claim 23, line 1, the limitation “wherein outputting” has been replaced by --- wherein the outputting ---.

Claim 23, line 2, the limitation “a prefix” has been replaced by --- the prefix ---.

Claim 24, line 2, the limitation “a subset” has been replaced by --- the subset ---.

Claim 25, line 1, the limitation “wherein outputting” has been replaced by --- wherein the outputting ---.

Claims 5, 9 and 18 have been canceled.

Allowable Subject Matter

3. The following is an examiner’s statement of reasons for allowance:

Regarding claim 1, the prior art fails to teach a combination of the steps of:

means for generating the sequence of samples in time domain of the symbol via an inverse Fourier transform on phase shifted complex coefficients such that said subset of samples of the symbol are shifted at the beginning of the symbol according to a circular permutation and such that the symbol is delayed by an amount of time for generating said prefix; and

a memory for storing the subset samples, wherein said memory stores only the subset of samples without storing any other sample of the symbol, in the specific combination as recited in the claim.

Regarding claim 6, the prior art fails to teach a combination of the steps of:

storing the subset samples of the beginning of the symbol in the buffer without storing any other sample of the symbol, in the specific combination as recited in the claim.

Regarding claim 11, the prior art fails to teach a combination of the steps of:

outputting the symbol in the time domain with a subset of the samples as a prefix of the symbol, wherein the set of samples is a sequence of samples that includes a first

sample and a last sample, and the subset of samples includes at least the first sample, and wherein outputting the symbol in the time domain with the subset of the samples as a prefix of the symbol includes:

sequentially providing, from the inverse Fourier transform circuit, each sample of the subset of samples to a buffer and a multiplexer, wherein the multiplexer sequentially outputs each respective sample provided thereto;

sequentially providing, from the inverse Fourier transform circuit, each sample that is not a member of the subset of samples to the multiplexer after the subset of samples are provided to the multiplexer; and

sequentially providing, from the buffer, each buffered sample from the subset of samples, in the specific combination as recited in the claim.

Regarding claim 19, the prior art fails to teach a combination of the steps of:

buffering a subset of the set of time-domain samples, the subset of the set of time- domain samples being less than the set of time-domain samples and greater than zero, in the specific combination as recited in the claim.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TOAN D. NGUYEN whose telephone number is (571)272-3153. The examiner can normally be reached on M-F (7:00AM-4:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. D. N./
Examiner, Art Unit 2416

/William Trost/

Supervisory Patent Examiner, Art Unit 2416